CLAIMS

What is claimed is:

1. A cationically polymerizable liquid composition comprising:

a cationically polymerizable mixture (A) comprising:

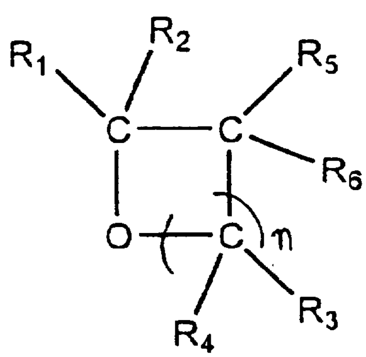
a monofunctional monomer (A-1) having in the molecule only one cyclic ether structure represented by formula (1) below;

a polyfunctional monomer (A-2) having in the molecule at least two cyclic ether structures represented by formula (1) below; and

a latent cationic polymerization initiator (A-3); and

a solid resin (B) that is compatible with the above-mentioned mixture (A) at room temperature and has a softening point of at least 40°C;

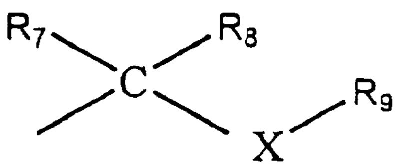
the composition having a viscosity at 25°C of 20 Pa·sec or below.



(1)

(In formula (1), n denotes 0, 1, or 2, and R_1 to R_6 independently denote hydrogen atoms or hydrocarbon groups, which may have a substituent.)

2. The cationically polymerizable liquid composition according to Claim 1 wherein at least one of R_1 to R_6 in formula (1) is a substituent represented by formula (2) below.

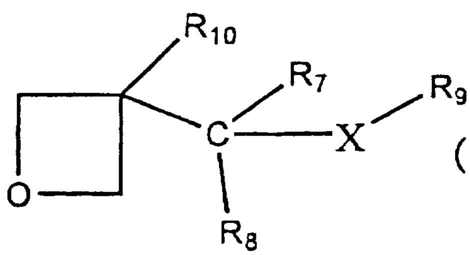


(2)

(In formula (2), R_7 and R_8 denote hydrogen atoms or alkyl groups, which may have a substituent, R_9 is a straight- or branched-chain alkyl group that has at least 4 carbon atoms, and X denotes oxygen or $-CH_2-$.)

3. The cationically polymerizable liquid composition according to Claim 1 wherein the monofunctional monomer (A-1) is an oxetane represented by formula (1) in which n = 1.

4. The cationically polymerizable liquid composition according to Claim 1 wherein the monofunctional monomer (A-1) is represented by formula (3) below.



(3)

(In formula (3), R_7, R_8 and R_{10} denote hydrogen atoms or C_1 to C_{10} alkyl groups, which may have a substituent, R_9 denotes a straight- or branched-chain C_4 to C_{24} alkyl group, and X denotes an oxygen atom.)

5. The cationically polymerizable liquid composition according to Claim 1 wherein the polyfunctional monomer (A-2) is an epoxy resin containing at least two epoxy groups.

6. The cationically polymerizable liquid composition according to Claim 1 wherein the polyfunctional monomer (A-2) contains at least two alicyclic epoxy groups.

7. The cationically polymerizable liquid composition according to Claim 1 wherein the polyfunctional monomer (A-2) contains at least two oxetanyl groups.

8. The cationically polymerizable liquid composition according to Claim 1 wherein the polyfunctional monomer (A-2) is 3,4-epoxycyclohexylmethyl-3′,4′-epoxycyclohexanecarboxylate.

9. The cationically polymerizable liquid composition according to Claim 1 wherein the cationic polymerization initiator (A-3) is photo-latent or thermo-latent.

10. The cationically polymerizable liquid composition according to Claim 1 wherein the solid resin (B) is a hydrogenated petroleum resin and/or a hydrogenated rosin resin.

11. The cationically polymerizable liquid composition according to Claim 1, further comprising a monool or a polyol having at least one terminal hydroxy group and a molecular weight of 300 to 10,000.

12. The cationically polymerizable liquid composition according to Claim 1 wherein the component A-2 is present at 5 to 50 wt % of the total amount of component A-1 plus component A-2.

13. The cationically polymerizable liquid composition according to Claim 6 wherein the polyfunctional monomer having at least two alicyclic epoxy groups (A-2) is present at 1 to 30 wt % of the total amount of component A-1 plus component A-2.

14. The cationically polymerizable liquid composition according to Claim 1 wherein the latent cationic polymerization initiator (A-3) is present at 0.01 to 5 wt % of the total amount of component A-1 plus component A-2.

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15. The cationically polymerizable liquid composition according to Claim 1 wherein the solid resin (B) is present at 10 to 300 parts by weight relative to 100 parts by weight of the cationically polymerizable mixture (A).

16. The cationically polymerizable liquid composition according to Claim 1 wherein the complex modulus of elasticity (G*) at 25°C of the polymer obtained by cationic polymerization satisfies the following conditions.

$G^* > 100{,}000$ (measurement frequency: 0.1 Hz),

$G^* < 4{,}000{,}000$ (measurement frequency: 1 Hz),

$G^* > 2{,}000{,}000$ (measurement frequency: 100 Hz).

17. The cationically polymerizable liquid composition according to Claim 1 wherein the complex modulus of elasticity (G*) at 100°C of the polymer obtained by cationic polymerization satisfies the following condition.

$G^* > 100{,}000$ (measurement frequency: 0.1 Hz)

18. The cationically polymerizable liquid composition according to Claim 1 wherein the loss tangent (Tan δ) of the polymer obtained by cationic polymerization is at least 0.8 (measurement frequency: 100 Hz).

19. The cationically polymerizable liquid composition according to Claim 1 wherein the glass transition temperature of the polymer obtained by cationic polymerization is 0°C or below.

20. A tacky polymer obtained by cationic polymerization of a cationically polymerizable liquid composition comprising:

a cationically polymerizable mixture (A) comprising:

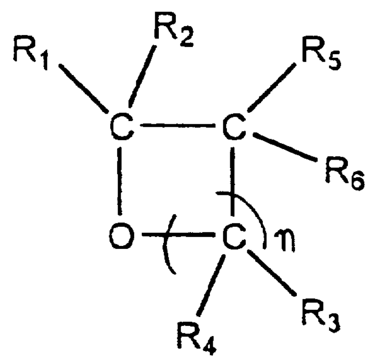
a monofunctional monomer (A-1) having in the molecule only one cyclic ether structure represented by formula (1) below;

a polyfunctional monomer (A-2) having in the molecule at least two cyclic ether structures represented by formula (1) below; and

a latent cationic polymerization initiator (A-3); and

a solid resin (B) that is compatible with the above-mentioned mixture (A) at room temperature and has a softening point of at least 40°C;

the composition having a viscosity at 25°C of 20 Pa·sec or below.



(1)

(In formula (1), n denotes 0, 1, or 2, and R_1 to R_6 independently denote hydrogen atoms or hydrocarbon groups, which may have a substituent.)

21. The tacky polymer according to Claim 20 wherein the complex modulus of elasticity (G*) at 25°C and 100°C of the polymer obtained by cationic polymerization satisfies the following conditions.

At 25°C;

$G^* > 100{,}000$ (measurement frequency: 0.1 Hz),

$G^* < 4{,}000{,}000$ (measurement frequency: 1 Hz),

$G^* > 2{,}000{,}000$ (measurement frequency: 100 Hz),

at 100°C;

$G^* > 100{,}000$ (measurement frequency: 0.1 Hz).